



**DuPont Legal**

Berley Mill Plaza, Room 25/1322  
PO Box 80026  
Wilmington, DE 19880-0026

**FAX COVER PAGE**

**September 10, 2003**

**Please Deliver to:** Examiner McElwain

**Re:** Application No. 09/732597  
Case No.: BB1413 US NA

**From:** Lynne Christenbury

**Fax :** (302) 892-1026

**Phone:** (302) 992-5481

**Pages:** 14 Including Cover Sheet

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**SEP 10 2003**

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**Complete if Known**

Effective 01/01/2003, Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT	(\$)	410.00
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Application Number	09/732597
Filing Date	December 98, 2000
First Named Inventor	Rebecca E. Cahoon ET AL
Examiner Name	E. F. McElwain
Art Unit	1838
Attorney Docket No.	BB1413 US NA

**METHOD OF PAYMENT** (check all that apply)

☐ Check ☐ Credit card ☐ Money ☐ Other ☐ None☒ Deposit Account;

04-1928

Number  
Deposit  
Account  
Name

E. J. du Pont de Nemours and Company

The Director is authorized to: (check off that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) during the pendency of this application

Charge for(s) indicated below, except for the filing fee to the above-identified deposit account.

### FEE CALCULATION

### 1. BASIC FILING FEE

	Large Entity	Small Entity
1. <b>Revenue</b>	More than \$5 million	Less than \$5 million
2. <b>Assets</b>	More than \$10 million	Less than \$10 million
3. <b>Employees</b>	More than 100	Less than 100
4. <b>Debt</b>	More than \$1 million	Less than \$1 million
5. <b>Equity</b>	More than \$1 million	Less than \$1 million
6. <b>Complexity</b>	More complex	Less complex
7. <b>Industry</b>	More volatile	Less volatile
8. <b>Geography</b>	More international	Less international
9. <b>Regulation</b>	More regulated	Less regulated
10. <b>Competition</b>	More competitive	Less competitive
11. <b>Technology</b>	More advanced	Less advanced
12. <b>Management</b>	More experienced	Less experienced
13. <b>History</b>	More established	Less established
14. <b>Size</b>	More than 100 employees	Less than 100 employees
15. <b>Revenue</b>	More than \$5 million	Less than \$5 million
16. <b>Assets</b>	More than \$10 million	Less than \$10 million
17. <b>Employees</b>	More than 100	Less than 100
18. <b>Debt</b>	More than \$1 million	Less than \$1 million
19. <b>Equity</b>	More than \$1 million	Less than \$1 million
20. <b>Complexity</b>	More complex	Less complex
21. <b>Industry</b>	More volatile	Less volatile
22. <b>Geography</b>	More international	Less international
23. <b>Regulation</b>	More regulated	Less regulated
24. <b>Competition</b>	More competitive	Less competitive
25. <b>Technology</b>	More advanced	Less advanced
26. <b>Management</b>	More experienced	Less experienced
27. <b>History</b>	More established	Less established
28. <b>Size</b>	More than 100 employees	Less than 100 employees
29. <b>Revenue</b>	More than \$5 million	Less than \$5 million
30. <b>Assets</b>	More than \$10 million	Less than \$10 million
31. <b>Employees</b>	More than 100	Less than 100
32. <b>Debt</b>	More than \$1 million	Less than \$1 million
33. <b>Equity</b>	More than \$1 million	Less than \$1 million
34. <b>Complexity</b>	More complex	Less complex
35. <b>Industry</b>	More volatile	Less volatile
36. <b>Geography</b>	More international	Less international
37. <b>Regulation</b>	More regulated	Less regulated
38. <b>Competition</b>	More competitive	Less competitive
39. <b>Technology</b>	More advanced	Less advanced
40. <b>Management</b>	More experienced	Less experienced
41. <b>History</b>	More established	Less established
42. <b>Size</b>	More than 100 employees	Less than 100 employees
43. <b>Revenue</b>	More than \$5 million	Less than \$5 million
44. <b>Assets</b>	More than \$10 million	Less than \$10 million
45. <b>Employees</b>	More than 100	Less than 100
46. <b>Debt</b>	More than \$1 million	Less than \$1 million
47. <b>Equity</b>	More than \$1 million	Less than \$1 million
48. <b>Complexity</b>	More complex	Less complex
49. <b>Industry</b>	More volatile	Less volatile
50. <b>Geography</b>	More international	Less international
51. <b>Regulation</b>	More regulated	Less regulated
52. <b>Competition</b>	More competitive	Less competitive
53. <b>Technology</b>	More advanced	Less advanced
54. <b>Management</b>	More experienced	Less experienced
55. <b>History</b>	More established	Less established
56. <b>Size</b>	More than 100 employees	Less than 100 employees
57. <b>Revenue</b>	More than \$5 million	Less than \$5 million
58. <b>Assets</b>	More than \$10 million	Less than \$10 million
59. <b>Employees</b>	More than 100	Less than 100
60. <b>Debt</b>	More than \$1 million	Less than \$1 million
61. <b>Equity</b>	More than \$1 million	Less than \$1 million
62. <b>Complexity</b>	More complex	Less complex
63. <b>Industry</b>	More volatile	Less volatile
64. <b>Geography</b>	More international	Less international
65. <b>Regulation</b>	More regulated	Less regulated
66. <b>Competition</b>	More competitive	Less competitive
67. <b>Technology</b>	More advanced	Less advanced
68. <b>Management</b>	More experienced	Less experienced
69. <b>History</b>	More established	Less established
70. <b>Size</b>	More than 100 employees	Less than 100 employees
71. <b>Revenue</b>	More than \$5 million	Less than \$5 million
72. <b>Assets</b>	More than \$10 million	Less than \$10 million
73. <b>Employees</b>	More than 100	Less than 100
74. <b>Debt</b>	More than \$1 million	Less than \$1 million
75. <b>Equity</b>	More than \$1 million	Less than \$1 million
76. <b>Complexity</b>	More complex	Less complex
77. <b>Industry</b>	More volatile	Less volatile
78. <b>Geography</b>	More international	Less international
79. <b>Regulation</b>	More regulated	Less regulated
80. <b>Competition</b>	More competitive	Less competitive
81. <b>Technology</b>	More advanced	Less advanced
82. <b>Management</b>	More experienced	Less experienced
83. <b>History</b>	More established	Less established
84. <b>Size</b>	More than 100 employees	Less than 100 employees
85. <b>Revenue</b>	More than \$5 million	Less than \$5 million
86. <b>Assets</b>	More than \$10 million	Less than \$10 million
87. <b>Employees</b>	More than 100	Less than 100
88. <b>Debt</b>	More than \$1 million	Less than \$1 million
89. <b>Equity</b>	More than \$1 million	Less than \$1 million
90. <b>Complexity</b>	More complex	Less complex
91. <b>Industry</b>	More volatile	Less volatile
92. <b>Geography</b>	More international	Less international
93. <b>Regulation</b>	More regulated	Less regulated
94. <b>Competition</b>	More competitive	Less competitive
95. <b>Technology</b>	More advanced	Less advanced
96. <b>Management</b>	More experienced	Less experienced
97. <b>History</b>	More established	Less established
98. <b>Size</b>	More than 100 employees	Less than

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1001	750	2001	375	Utility filing fee	
1002	330	2002	165	Design filing fee	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Release filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1)	(\$)	0.00
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## 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below	Fee Paid
Total Claims	20**		X	18	
Independent Claims	3**		X	84	
Multiple Dependent	YES			250	

<u>Large Entry</u>		<u>Small Entry</u>		<u>Fee Description</u>
<u>Fee Code</u>	<u>Fee (\$)</u>	<u>Fee Code</u>	<u>Fee (\$)</u>	
1202	18	2202	9	Claims in excess of 20
1201	84	2201	42	Independent claims in excess of 3
1203	280	2203	140	Multiple dependent claim, if not paid
1204	84	2204	12	** Release independent claims over original patent
1205	18	2205	9	** Release claims in excess of 20 and over original patent

SUBTOTAL (2)	(\$)	0.00
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\*\*or number previously paid. If smaller: For Reissues, see above

**FEE CALCULATION (continued)**

### 3. ADDITIONAL FEES

Large Entity : Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description
1051	130	2051	65	Surcharge - late filing fee or oath
1052	80	2052	26	Surcharge - late provisional filing fee or cover sheet
1053	130	1053	130	Non-English specification
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action
1806	1,840*	1806	1,840*	Requesting publication of SIR after Examiner action
1251	110	2251	55	Extension for reply within first month
1252	410	2252	205	Extension for reply within second month
1253	830	2253	465	Extension for reply within third month
1254	1,450	2254	725	Extension for reply within fourth month
1255	1,670	2255	955	Extension for reply within fifth month
1401	320	2401	180	Notice of Appeal
1402	320	2402	160	Filing a brief in support of an appeal
1403	280	2403	140	Request for oral hearing
1451	1,510	1451	1,510	Petition to institute a public use proceeding
1452	110	2452	55	Petition to revive - unavoidable
1453	1,300	2453	650	Petition to revive - unintentional
1501	1,300	2501	650	Utility issue fee (or release)
1502	470	2502	235	Design issue fee
1503	630	2503	315	Plant issue fee
1450	130	1450	130	Petitions to the Commissioner
1807	50	1807	60	Processing fee under 37 CFR 1.17(c)
1806	180	1806	180	Submission of Information Disclosure Stmt
8021	40	8021	40	Recording each patent assignment per property (times number of properties)
1808	750	2808	375	Filing a submission after final rejection (37 CFR 1.129(a))
1810	750	2810	375	For each additional invention to be examined (37 CFR 1.129(b))
1801	750	2801	375	Request for Continued Examination (RCE)
1802	900	1802	900	Request for expedited examination of a design application

Other food (specify) \_\_\_\_\_

Reduced by Basic Filing Fee Paid	SUBTOTAL (3)	(\$)	410.00
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## SUBMITTED BY

Name (Print/Type)	Lynne M. Christenbury
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Registration No.	30,971
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(Complete if applicable)

Telephone	(302) 992-5481
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Signature	James M. Christensen
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Date	June 30, 2003
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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Rev. 4/96

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

REBECCA E. CAHOON ET. AL.

CASE NO.: BB1413 US NA

APPLICATION NO.: 09/732597

GROUP ART UNIT: 1646

FILED: DECEMBER 08, 2000

EXAMINER: E. F. MCELWAIN

FOR: ENZYMES INVOLVED IN PETROSELINIC ACID BIOSYNTHESIS

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SEP 10 2003

VIA FACSIMILECommissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Enclosed herewith is a copy the response, appendices, petition for extension of time, fee sheet, the certificate of mailing dated June 30, 2003 and a copy of the postcard date stamped by the U.S. Patent and Trademark Office as being received on July 2, 2003 that were submitted in response to Office

Action dated January 29, 2003 in connection with the above-identified application.

These papers are being resubmitted pursuant to the request of Examiner McElwain made on September 10, 2003 since the original papers appear to have be missing.

Applicants respectfully request entry of these papers with an effective date of June 30, 2003.

Respectfully submitted,

LYNNE M. CHRISTENBURY  
ATTORNEY FOR APPLICANTS

Registration No.: 30,971

Telephone: (302) 992-5481

Facsimile: (302) 892-1026

Dated: September 10, 2003

PTO/SB/92 (05-03)

Approved for use through 04/30/2003, OMB 0661-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

on June 30, 2003.  
Date

Lisa Z. Turner  
Signature

LISA Z. TURNER

Type or printed name of person signing Certificate

Note: Each paper must have its own certificate of mailing, or this certificate must identify each submitted paper.

09/732,597  
BB1413 US NA  
AMENDMENT - 6 PAGES  
APPENDIX A - 1 PAGE  
APPENDIX B - 1 PAGE  
PETITION FOR EXTENSION OF TIME - 1 PAGE  
FEE SHEET - 1 PAGE  
POSTCARD

Burden Hour Statement: This form is estimated to take 0.03 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

THE STAMP OF THE PATENT OFFICE HEREBY ACKNOWLEDGES THE  
RECEIPT, ON THE DATE INDICATED, OF THE FOLLOWING:

CASE NO.:

BH1413 US NA

APPLICATION NO.:

09/732597

CONFIRMATION NO.:

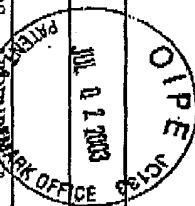
2801

DOCUMENT:

AMENDMENT - 6 PAGES, APPENDIX A - 1  
PAGE, APPENDIX B - 1 PAGE, PETITION  
FOR EXTENSION OF TIME - 1 PAGE, FEE  
SHEET - 1 PAGE, CERTIFICATE OF  
MAILING

ATTORNEY:

Lynne M. Christenbury



Rev. 10/93

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

EDGAR B. CAHOON ET. AL.

CASE NO.: BB1413 US NA

SERIAL NO.: 09/732597

GROUP ART UNIT: 1646

FILED: DECEMBER 08, 2000

EXAMINER: ELIZABETH MCELWAIN

FOR: ENZYMES INVOLVED IN PETROSELINIC ACID BIOSYNTHESIS

AMENDMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is in response to the Office Action dated January 29, 2003 regarding the above-referenced application. Applicants respectfully request reconsideration and submit the following in support thereof:

AMENDMENTS TO SPECIFICATION:

Delete paragraph page 5, lines 10-15 :

~~Figure 3 shows a mass spectral identification of novel (A) hexadecenoic acid (16:1), and (B) octadecenoic acid (18:1) isomers in transgenic tobacco callus expressing the *Hedera helix* acyl-ACP desaturase (clone ehhlc.pk002.f22, SEQ ID NOs:1 and 2). The mass spectra shown were obtained by gas chromatography-mass spectrometry (GC-MS) of dimethyl disulfide (DMS) derivatives of fatty acid methyl esters from tobacco callus expressing the cDNA for EST ehhlc.pk002.f22.~~

Amend page 33, lines 1-12:

$\Delta^4$  isomer (Fig. 3A). In addition, the mass spectrum of the dimethyl disulfide derivative of the novel 18:1 methyl ester in the transgenic tobacco callus contained diagnostic ions consistent with that of petroselinic acid, the 18:1 $\Delta^6$  isomer (Fig. 3B). These results thus indicate that the diverged acyl-ACP desaturase corresponding to the cDNA for EST ehhlc.pk002.f22 is associated with petroselinic acid synthesis. Based on the biosynthetic pathway for petroselinic acid previously described in Umbelliferae species [Cahoon, E.B. and Ohlrogge, J.B. (1994) *Plant Physiol.* 104:827-844], the *Hedera helix* diverged acyl-ACP desaturase is likely a  $\Delta^4$ -specific palmitoyl (16:0)-ACP desaturase. This is consistent with the presence of the novel 16:1 $\Delta^4$  isomer in the transgenic tobacco callus (Fig. 3A). The 16:1 $\Delta^4$  isomer bound to ACP likely serves as the biosynthetic precursor for petroselinic acid (18:1 $\Delta^6$ ), as